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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,292	05/10/2007	Rob Bristow	P18016-US2	8887

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EXAMINER	
AHN, SUNG S	

ART UNIT	PAPER NUMBER
2611	

MAIL DATE	DELIVERY MODE
06/04/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/597,292	BRISTOW ET AL.	
	Examiner	Art Unit	
	SUNG AHN	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *6-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 May 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Throughout the specification, figure block (6) is referred as both adder and switching gates. All should be referring to either adder or switching gates.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8, 9, 10, 12-14, 17, 18-19, 22, and 23 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. All dependent claims are included in this rejection.

4. Claims 9, 12, 18-19, and 23 recites the limitation " the set of output reference frequency signals have frequencies corresponding to frequencies……. mobile telecommunication standards". Since the mobile telecommunication standards constantly change, one of ordinary skill in the art could not ascertain and interpret the metes and bounds of the patent protection desired as to this limitation. Claims 10 and 13-14 are rejected because they depends from claims 9 and 12, respectively; thus incorporates their limitation.

5. Claims 8, 14, 17, and 22 recites the limitation "time-varying portion". It is not clear the metes and bounds of claim as only “fixed” and “varying” is used to explain the programmable divider. For examination purpose “time-varying” is equivalent to “programmable” as it is explained in specification.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1 – 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. PGPub. No. 20010031627 to Ries in further view of Applicant’s Submitted Prior Art DE10112575A1 (Using Document Family reference of U.S. PGPub. No. 20040121744 for translation purpose) to Wannenmacher.

As to **Claims 6 and 20**, Ries disclose a phase locked loop circuit for a radio frequency transmit and receive apparatus (paragraph [0001]), the circuit comprising:

a first voltage controlled oscillator which is operable to produce a first reference frequency signal (Fig. 1, block 22-1, paragraph [0011, 0036], where a single PLL-circuit is providing multiple band frequency though multiple voltage controlled oscillators (VCO) as more noise is introduced with single VCO with wide turning range);

a second voltage controlled oscillator which is operable to produce a second reference frequency signal (Fig. 1, block 22-n, where number of VCO will be depend on number of frequency band range (900MHz for GSM 900 and 1800MHz for GSM 1800));

a switchable divider, coupled to receive the first and second reference frequency signals, and operable to produce a set of output reference frequency signals therefrom, (Fig. 1, block 14 and 24, paragraph [0035], where multiple VCOs are connected through coupling network (switch) and divider);

a voltage controlled oscillator (VCO) control means coupled to receive an external reference signal and a feedback signal, and operable to supply a control voltage to the first and second voltage controlled oscillators in dependence upon received external reference and feedback signals, so as to maintain desired first and second reference frequency signals (Fig. 1, block 14 and 24, paragraph [0007, 0035], where phase detector (16) generates control output (correcting variable) to different voltage-controlled oscillators (22-1, 22-n) using input from reference signal and feedback signal);

wherein the first and second reference frequency signals are not equal in frequency to the output reference frequency signals in the set of output reference frequency signals (paragraph [0036, 0037], where output of each VCO will be specific frequency band);

Ries disclose a phase locked loop circuit for a radio frequency transmit and receive apparatus (paragraph [0001]) generating multiple frequency bands but does not expressly disclose of the switchable set of dividers (only one divider (Fig. 1 block 14) is shown in Ries as producing feedback signal to VOC control means (Fig. 1 block 16) from selected signal from first and second reference signal from VCOs).

Meanwhile Wannenmacher disclose wherein the set of dividers comprises:

first divider for selectively receiving the first or second reference frequency signals, and for producing a high band output reference frequency signal for a transmitter (Fig. 1, paragraph [0020, 0021], where first divider (12) selects reference signal from first and second oscillators for specific frequency range depends on divider value);

a second divider for receiving the second reference frequency signal and for producing a low band output reference frequency signal for the transmitter; a second divider for receiving the second reference frequency signal and for producing a low band output reference frequency signal for the transmitter (Fig. 1, paragraph [0021], where second divider (18) receive reference signal from second oscillator (10) to generate specific frequency (lower than UMTS frequency of 2GHz) but will be vary by different divider value);

a third divider for selectively receiving the first or second reference frequency signals and for producing local oscillator output reference frequency signals for a receiver, and for producing a feedback signal for supply to the VCO control means (Ries - (Fig. 1 block 14), where third divider (divider before the voltage controller (similar to PLL block (16) of Wannenmacher figure 1)) produce the feedback signal to VOC control means (Fig. 1 block 16) from selected signal from first and second reference signal from VCOs).

Therefore, one skilled in the art would have found obvious from the combined teachings of Ries and Wannenmacher as a whole to produce the invention as claimed with a reasonable expectation of producing additional multiband frequency with multiple set of switchable dividers to improve the performance of the transceiver (paragraph [0003] – supporting additional frequency range).

As to **Claims 7 and 21**, Ries further disclose the phase locked loop wherein the set of dividers is operable to vary a modulus value thereof, thereby causing the first and second voltage controlled oscillators to be frequency modulated (paragraph [0034], where dividers are programmable to support frequency tuning).

As to **Claims 8 and 22**, Ries further disclose the phase locked loop wherein the modulus value has a fixed portion and a time-varying portion (paragraph [0034], where dividers are programmable to support frequency tuning and meanwhile Wannenmacher disclose the fixed value used for divider. Therefore, one skilled in the art would have found obvious from the combined teachings of Ries and Wannenmacher as a whole to produce the invention as claimed with a reasonable expectation of producing dividers with modulus value with both fixed and time-varying (programmable to varies the value in time to support frequency tuning) to support coarse band frequency (for VCOs) and fine frequency (for PLL) turning).

As to **Claims 9 and 23**, Ries further disclose the phase locked loop wherein the set of output reference frequency signals have frequencies corresponding to frequencies required for GSM850, GSM900, DCS1800 and PCS1900 mobile telecommunications standards (paragraph [0010], where frequency band support include GSM900, GSM1800).

As to **Claims 10 and 24**, Ries further disclose the phase locked loop wherein the first and second voltage controlled oscillators are selectively controlled by a phase locked loop (Fig. 1, where first and second voltage is controlled by coupling network (switch) in PLL system).

As to **Claims 11 and 15**, Rejection is same as claim 10.

As to **Claims 12, 18, and 19**, Rejection is same as claim 9.

As to **Claims 13 and 16**, Rejection is same as claim 7.

As to **Claims 14 and 17**, Rejection is same as claim 8.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUNG AHN whose telephone number is (571)270-3706. The examiner can normally be reached on Monday-Friday, 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571)272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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